

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM
maintained by the
CALIFORNIA DEPARTMENT OF FISH AND GAME
and supported by the
CALIFORNIA INTERAGENCY WILDLIFE TASK GROUP
Database Version 8.1 (2005)

A039 Pacific Treefrog *Hyla regilla*
Family: Hylidae Order: Anura Class: Amphibia

Written by: S. Morey
Reviewed by: T. Papenfuss
Edited by: R. Duke, E. C. Beedy

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

This widely distributed species is California's most common amphibian, absent only from dry desert habitats. Elevations of occurrence extend from sea level to at least 3384 m (11,000 ft) in the Sierra Nevada (Stebbins 1985).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Adults take a variety of larval and adult invertebrates including slugs, spiders, isopods, centipedes, earthworms, and insects (Brattstrom and Warren 1955, Johnson and Bury 1965).

Cover: During the breeding season, individuals take daytime cover under clumps of vegetation and surface objects near water. During the remainder of the year, they leave their breeding sites and seek cover in moist niches in buildings, wells, rotting logs or burrows.

Reproduction: Breeding and egg-laying may occur in any body of water, but temporary pools with plenty of submerged and emergent vegetation appear to be favored. Egg clusters are usually deposited on stems anchored to the bottom in quiet shallow water.

Water: Although not restricted to wetland habitats, this species always selects moist refuges. Jameson (1966) showed that adults lose body water rapidly when exposed to high temperature and low humidity in laboratory conditions. Sustained movements by adults primarily occur during, or just after, rains. Tadpoles require standing water for periods long enough to complete their aquatic development, which varied from a month at warmer localities, to three, or more, months at high elevations in the Sierra.

Pattern: Associated with permanent or temporary water of all kinds in all California habitats, except dry desert types.

SPECIES LIFE HISTORY

Activity Patterns: At most localities, Pacific treefrogs concentrate their activities between late afternoon and midnight. At high elevations in the Sierra, diurnal activity is common. Individuals are active all year except during cold or dry periods.

Seasonal Movements/Migration: Areas of non-breeding activity were up to 910 m (1000 yds) away from breeding sites (Brattstrom and Warren 1955). Migrations to and from breeding localities occur at night, usually during or just after rains.

Home Range: One study using marked individuals revealed that although many frogs moved less than 10 m (33 ft) during an entire breeding season, some traveled longer

distances (Schaub and Larsen 1978). One individual moved 400 m (1300 ft) in no more than four days. Except for migration to and from breeding sites, movements usually do not exceed a few meters except on rainy nights when longer distances may be traveled.

Territory: Whitney (1980) reported that males were territorial during the breeding season, defending circles around themselves with radii of about 50 cm (20 in). Territories are maintained by vocalizations and/or physical combat.

Reproduction: Reproduction occurs for a few weeks, anytime between January and July (Stebbins 1972) depending, on local conditions. Females only remain at breeding sites for one or a few nights during the breeding season, while males stay there from 2 weeks to over 2 months. Females deposit eggs in numerous small clusters, usually about 25 eggs (9 to 70) per cluster. Individual females may lay a total of 700 eggs. Eggs hatch in 1 to 5 weeks, and tadpoles may attain a premetamorphic size of up to 55 mm (1.8 in). Males may attain sexual maturity in less than one year at some localities (Jameson 1957).

Niche: Brattstrom and Warren (1955) suggested no competition between the Pacific treefrog and other sympatric species of frogs or toads, with the possible exception of the California treefrog. Pacific treefrogs and their tadpoles are preyed upon by introduced sunfishes, bullfrogs, garter snakes, a variety of birds, and some nocturnal mammals. Tadpoles are also taken by predator insect larvae.

REFERENCES

- Brattstrom, B. H., and J. W. Warren. 1955. Observations on the ecology and behavior of the Pacific treefrog, *Hyla regilla*. *Copeia* 1955:181-191.
- Jameson, D. L. 1957. Population structure and homing responses in the Pacific treefrog. *Copeia* 1957:221-228.
- Jameson, D. L. 1966. Rate of weight loss of tree frogs at various temperatures and humidities. *Ecology* 47:605-613.
- Johnson, C. R., and R. B. Bury. 1965. Food of the Pacific treefrog, *Hyla regilla* Baird and Girard, in northern California. *Herpetologica* 21:56-58.
- Schaub, D. L., and J. H. Larsen. 1978. The reproductive ecology of the Pacific treefrog (*Hyla regilla*). *Herpetologica* 34:409-416.
- Stebbins, R. C. 1972. California amphibians and reptiles. Univ. California Press, Berkeley. 152 pp.
- Stebbins, R. C. 1985. A field guide to western reptiles and amphibians. 2nd ed., revised. Houghton Mifflin, Boston. 336pp.
- Whitney, C. L. 1980. The role of the "encounter" call in spacing of Pacific tree frogs, *Hyla regilla*. *Can. J. Zool.* 58:75-78.
- C. 1972. California amphibians and reptiles. Univ. California Press, Berkeley. 152 pp.